

ORTHOPTERA and HEMIPTERA.—By *Arthur Gardiner Butler, F.L.S., F.Z.S., &c.*
(Plate LIV.)

Fifteen species of *Orthoptera* were obtained by Messrs. Gulliver and Slater, one of these was, however, in an immature condition, and therefore only its genus could be ascertained; four of the species appear to be endemic and new to science, the species of most interest being *Phisis spinifera*, a form nearly allied to *P. pectinata* from the Samoa Islands, Molluccas, and Ceylon.

Of the *Orthoptera* previously described, seven are recorded from Mauritius and Bourbon, and three from Madagascar; two of the latter are, however, cosmopolitan species.

Amongst the *Hemiptera* of which there are 20 species, five are new to science; two are immature and cannot be specifically identified. With the exception of three species, the whole of the recognisable forms are referable to the *Hemiptera Heteroptera*. Their geographical distribution seems to be as follows: five endemic, five occurring in Mauritius and Bourbon, and seven in Madagascar; two of these, *Nezara viridula* and *Conorhinus rubrofasciatus*, appear to be cosmopolitan or nearly so, and one species, *Serinetha lateralis*, seems to be generally distributed over Africa; in addition to these, four species have hitherto only been recorded from South Africa, and two from Algeria.

ORTHOPTERA.

Name of Species found in Rodriguez.	Hitherto found in Rodriguez only.	Previously obtained elsewhere.		
		Mauritius and Bourbon.	Madagascar.	Other Localities.
<i>Forficula auricula</i> , <i>Linn.</i> -	-			Cosmopolitan.
<i>Forficula varicornis</i> , <i>Smith</i> -	×			
<i>Panchlora corticum</i> , <i>Serville</i> -	-	×		Congo, Whydah.
<i>Phyllodromia germanica</i> , <i>Linnaeus</i> -	-	×	×	Cosmopolitan.
<i>Periplaneta americana</i> , <i>Linnaeus</i> -	-	×	×	Cosmopolitan.
<i>Periplaneta rhombifolia</i> , <i>Stoll</i> -	-			China, Brazil.
<i>Polyzosteria latipes</i> , <i>Walker</i> -	-			Sierra Leone.
<i>Gryllus capensis</i> , <i>Fabricius</i> -	-	×		Almost cosmopolitan.
<i>Mogoplistes</i> sp. (immature) -	×			
<i>Nemobius luteolus</i> , <i>Butler</i> -	×			
<i>Phisis spinifera</i> , <i>Butler</i> -	×			
<i>Xiphidium iris</i> , <i>Serville</i> -	-	×		
<i>Conocephalus differens</i> , <i>Serville</i> -	-	×		
<i>Pachytylus cinerascens</i> , <i>Fabr.</i> -	-	×		Old World generally.
<i>Epachromia rodericensis</i> , <i>Butler</i> -	×			
<i>Mantis variegata</i> , <i>Olivier</i> -	-		×	Natal and Sierra Leone.
<i>Bacillus incommodus</i> , <i>Butler</i> -	×			

Forficula auricula, Linn.

A single specimen taken by Mr. Gulliver. This insect is now almost cosmopolitan.

Forficula varicornis.

Smith, Ann. & Mag. Nat. Hist., 4th ser., vol. vii., p. 450 (1876).

Length $4\frac{1}{2}$ lines. Nigro-piceous, shining; the palpi, mouth, and legs pale testaceous, the prothorax rufo-piceous; antennæ 15-jointed, joints 12th and 13th white, five or six of the basal joints rufo-piceous, as are also the palpi; the prothorax oblong-quadrate, narrowly margined, and with a longitudinal impressed line not extending to the posterior margin; apterous; the abdomen smooth and shining; the basal half of the segments with fine shallow punctures; the apical segment with a deeply impressed longitudinal line, its posterior margin emarginate; the forceps very stout, triangular at the base, curved inwardly beyond the middle, acute at the apex, their inner margin crenulated.

Ten specimens obtained by Mr. Gulliver. This species would probably come into the genus *Brachylabis* of Dohrn.

Panchlora corticum, Serville.

Six examples were obtained by Messrs. Gulliver and Slater. This species has been considered synonymous with *P. Surinamensis*, but the African and Mascarene examples seem to be constantly shorter in the wings than those from Tropical America.

Phyllodromia germanica, L.

One example.

Periplaneta americana, L.

Mr. Slater collected five specimens of this species.

Periplaneta rhombifolia, Stoll.

The four specimens obtained differ in no respect from Chinese or Brazilian examples.

Polyzosteria latipes, Walker.

Eight examples, slightly varying in punctuation.

Gryllus capensis, Fabr.

Ten examples, varying slightly in colour.

Mogoplistes sp. (immature).

Two specimens.

Nemobius luteolus.(Plate LIV., figs. 2, 2^a.)

Ann. & Mag. Nat. Hist., s. 4, vol. xvii., p. 409 (1876).

Stramineous; vertex of head greyish; pronotum irrorated with brownish, with a lateral slender ridge and a central depressed line; posterior abdominal segments greyish; cerci as long as oviduct, hairy; oviduct castaneous below and at the tip; tegmina nearly extending to the end of abdomen, pale stramineous; tibiæ of hind legs with three pairs of spines, also several terminal shorter spines.

Length of body 5 millims., of oviduct 2.

(Coll. by Gulliver.)

The single example is somewhat shrunken, and may have been killed before attaining its full coloration.

The head is obtusely produced between the antennæ, and is slightly depressed in the centre; the oviduct, as usual, is curved upwards; the wings are whitish and extend when closed to the end of the abdomen.

Phisis spinifera.(Plate LIV., figs. 1, 1^a.)

Ann. & Mag. Nat. Hist., s. 4, vol. xvii., p. 410 (1876).

Female. Testaceous, pronotum oblong, greyish, with carinated margins; abdomen greyish; oviduct stramineous; the femora of the two anterior pairs of legs with two converging longitudinal ferruginous lines above, of the first pair with six exterior and five interior lateral spines, distal end terminating on each side in a conical denticle; tibiæ with seven spines on each side; femora of second pair with seven exterior short spines, inferior margin denticulated; tibiæ with six exterior and five interior spines, longer than in the femora; femora of hind pair reddish, spinulose below; tibiæ denticulated.

Length of body 19 millims., of oviduct 9.

(Coll. by Gulliver.)

More robust than *P. pectinata*, rather differently coloured; anterior femora with strong terminal conical denticles.

The oviduct is blackish at the tip, compressed, and curved upwards; the tibiæ are more strongly denticulated on their superior than on their inferior surface.

Xiphidium iris, Serville.

Two specimens of this delicate species were collected by Mr. Gulliver.

Conocephalus differens, Serville.

Eight examples. The species obtained under this name from M. Brunner de Wattenwyl, and occurring in the Philippines, is entirely distinct; it is a much

more elongated species, with the head much more produced and acuminate. M. Serville says of his type "trouvés à l'Ile-de-France," and his description in all respects agrees with examples from Rodriguez.

Pachytylus cinerascens, Fabr.

Twenty examples in various stages.

Epachromia rodericensis.

(Plate LIV., figs. 3, 3^a.)

Ann. & Mag. Nat. Hist., s. 4, vol. xvii., p. 410 (1876).

Male. Pale carneous; pronotum and head above brown, adorned with an X-shaped marking, intersected by a longitudinal fascia, pale carneous edged with black; pronotum with a lateral oblique black streak, meso- and metanota testaceous, with lateral black spots; knees black at the sides; tibiæ with three black spots below, spines black; tegmina with the basal half coriaceous, brown, inner border whitish, base whitish-speckled, a white subquadrate costal spot; apical half pale brownish hyaline, crossed by ill-defined irregular white bars; veins dark brown; wings hyaline white, veins black.

Length of the body 12 to 18 millims.

(Coll. by Gulliver.)

This species does not vary in coloration.

Eleven specimens in various stages were taken.

Mantis variegata, Olivier.

Fifteen examples in various stages.

Bacillus incommodus.

(Plate LIV., figs. 4, 4^{a-c}.)

Ann. & Mag. Nat. Hist., s. 4, vol. xvii., p. 410 (1876).

"Green, with red antennæ, when alive."

Ochreous, clouded with purplish brown; eyes black; head truncate-ovate, with central and lateral longitudinal depressed lines, longer than the pronotum; antennæ with twenty-four joints, basal joint broad, depressed; pronotum quadrate, with obtusely carinated margins; two longitudinal series of four obtuse well-developed tubercles; a central depression; mesonotum dorsally carinate, covered with tubercles; a series of lateral tubercles between the pairs of legs; tegmina small; wings minute, coriaceous; anterior abdominal segments roof-like, laterally carinated; anal styles lanceolate; anterior legs considerably the longest, the femora strongly excavated and rugulose at the base, with two internal longitudinal marginal series

of denticles; all the legs parallelipedous, obtusely carinated; posterior femora denticulated below.

Length 3 inches 10 lines.

(Coll. by Gulliver and Slater.)

The pronotum might perhaps be more strictly described as irregularly lobulate, the lobes mammoid, capped with prominent tubercles, and arranged in two longitudinal series of four, between them a depressed mesial line. The general aspect of the species is that of the genus *Lopaphus*, but its structural characters agree in all respects with those of *Bacillus*. Five specimens were found in the island. It is "common on leaves of fan-palm, which it resembles in colour."—*G. Gulliver*.

HEMIPTERA.

Name of Species found in Rodriguez.	Hitherto found in Rodriguez only.	Previously obtained elsewhere.		
		Mauritius and Bourbon.	Madagascar.	Other Localities.
<i>Phricodes hystrix</i> , <i>Germar</i> - -	-	×	×	Caffraria.
<i>Æthus</i> sp.* (immature) - -	-		×	?
<i>Nezara viridula</i> , var <i>leii</i> , <i>Hope</i> - -	-	×	×	S. Europe, S. Asia, Malaysia, Columbia.
<i>Serinetha lateralis</i> , <i>Signoret</i> - -	-	×	×	Caffraria, Senegal, Sierra Leone, Calabar.
<i>Lethæus tartareus</i> , <i>Stål</i> - -	-			Cape.
<i>Rhyparochromus luctuosus</i> ? <i>Lucas</i> - -	-			Algeria.
<i>Dysdercus fasciatus</i> , <i>Signoret</i> - -	-		×	Sierra Leone, Zanzibar.
<i>Mezira caffra</i> , <i>Stål</i> - -	-			Cape.
<i>Conorhinus rubrofasciatus</i> , <i>De Geer</i> - -	-	×	×	Sierra Leone, India, Malaysia, China, Brazil.
<i>Oncocephalus cancellatus</i> , <i>Stål</i> - -	-			Caffraria.
<i>Reduvius laniger</i> , <i>Butler</i> - -	×			
<i>Emesa barbara</i> ? <i>Lucas</i> - -	-			Algeria.
<i>Velia infernalis</i> , <i>Butler</i> - -	×			
<i>Sigara scutellaris</i> , <i>Stål</i> - -	-			Country of the River Kuisip, Namaqua Land.
<i>Sigara sulcata</i> , <i>Signoret</i> - -	-		×	
<i>Sigara felix</i> , <i>Butler</i> - -	×			
<i>Cicada</i> sp. (larva) - -	-			
<i>Tylana carinata</i> , <i>Fabricius</i> - -	-	×		
<i>Coccus ceratiformis</i> , <i>Butler</i> - -	×			
<i>Aptinothrips fasciatus</i> , <i>Butler</i> - -	×			

Hemiptera Heteroptera.

Phricodes hystrix, *Germar*.

Four specimens were obtained by Mr. Gulliver at Rodriguez.

Æthus sp. (immature).

One specimen.

* May be *Æ. madagascariensis*.

Nezara viridula, Linn., var. *leii*, Hope.

If the various representatives of this species from all parts of the world (differing in form, sculpturing, and colour) be considered conspecific, *Pentatoma plicaticollis* of Lucas may be added to the synonymy.

One example of *N. leii* was taken by Mr. Gulliver "on flowers."

Serinetha lateralis, Signoret.

Twenty-one examples, in various stages of development, were found by Mr. Gulliver "under stones."

Lethæus tartaræus, Stål.

The seven examples obtained by Mr. Gulliver differ in no respect from the Cape form.

Rhyparochromus luctuosus? Lucas.

Two examples. Judging by the figure I cannot distinguish this species from that described by M. Lucas.

Dysdercus fasciatus, Signoret.

Twenty-five specimens, in various stages of development, found "on Malvaceous trees."—*G. Gulliver*.

Mezira caffra, Stål.

Fifteen examples. "Common under bark of trees."—*G. Gulliver*.

Conorhinus rubrofasciatus, De Geer.

One specimen was obtained by Mr. Slater.

Oncocephalus cancellatus, Stål.

Ten examples were collected.

Reduvius laniger.

(Plate LIV., figs. 6, 6^a.)

Ann. & Mag. Nat. Hist., s. 4, vol. xvii., p. 411 (1876).

Densely clothed with testaceous hair; antennæ slender, the three basal joints amber-yellow, remaining joints blackish; head castaneous; eyes blackish; rostrum pale castaneous, dark at the tip; thorax testaceous, with two nearly parallel longitudinal piceous bands, anterior lobe with a central longitudinal fossa; posterior lobe with a central depression; scutellum piceous, pale at the tip; corium of hemelytra testaceous, with two blackish spots and a cuneiform whitish spot between them; membrane dull purplish black; abdomen above amber-yellow, with marginal brown

spots, below piceous, with a yellowish band on each side; pectus shining black; legs amber-yellow; the femora with central and terminal brown bands.

Length $6\frac{1}{2}$ millims.

(Coll. by Gulliver.)

One example brought home; it is said to be "common under cow-dung."—*G. Gulliver*.

R. laniger seems to be of about the same size as *R. nanus*, of which Stål says: "Minima mihi cognita species generis." It cannot, however, be confounded with that insect, as, apart from its different coloration, its hairy character would alone be sufficient to distinguish it.

Emesa barbara? Lucas.

Two specimens, apparently immature. "Common in the hottest time of the year, February and March."—*G. Gulliver*.

Velia infernalis.

(Plate LIV., fig. 5.)

Ann. & Mag. Nat. Hist., s. 4, vol. xvii., p. 411 (1876).

Velvety black above, two grey spots on the front of the thorax, slaty grey below; sides of pectus whitish, anal segments of venter brown; legs black above, brownish below; the base of the antennæ, the coxæ, and the base of the femora orange-yellow.

Length 4 millims.

(Coll. by Gulliver.)

Allied to *V. nigricans* of Burmeister, but distinguished by its dull black colouring, and the two grey thoracic spots above.

Sixteen adult examples and 15 larvæ were obtained.

Sigara scutellaris, Stål.

Two examples.

Sigara sulcata, Signoret.

One specimen only.

Sigara felix.

(Plate LIV., figs. 8, 8^a.)

Ann. & Mag. Nat. Hist., s. 4, vol. xvii., p. 412 (1876).

Ovate, piceous; head rather wider than the thorax; vertex of head and sides of tegmina whitish testaceous, below greyish brown; legs fawn-colour; face rugose, vertex with slender transverse irregular impressions; thorax transversely striated; tegmina punctured, setose.

Length 2–3 millims.

(Coll. by Gulliver.)

Similar in coloration to *S. minutissima*; but smaller and comparatively broader. "Common in streams."—*G. Gulliver*.

Twenty-four specimens were collected.

Hemiptera Homoptera.

Cicada sp. (larva).

Four specimens. "Common."—*G. Gulliver*.

Tylana carinata, Fabricius.

One specimen.

Coccus ceratiformis.

(Plate LIV., fig. 9.)

Ann. & Mag. Nat. Hist., s. 4, vol. xvii., p. 412 (1876).

Female. Irregularly elliptical; above with posterior central depression; thinly covered with a fine powdery, silvery, waxy efflorescence, which conceals the coloration; when this is removed the insect is bright yellow, often with the central area largely piceous; about nine segmentations traceable; under surface somewhat concave; head sinuate in front, with an angular frontal depression, in front of which is an obtuse ridge; rostrum situated in the fore part of a deep obovate depression; antennæ 9-jointed, pale testaceous, sparsely clothed with setæ; legs pale testaceous, rather long (extending beyond the sides of the body in small examples), apparently with three tarsal joints and two terminal claws; pediferous lobes very prominent.

Greatest length 3 millims.

(Coll. by Gulliver.)

I cannot identify this species with any of those described by Messrs. Icery and Signoret.

Fourteen examples.

Physopoda.

Aptinothrips fasciatus.

(Plate LIV., fig. 7.)

Ann. & Mag. Nat. Hist., s. 4, vol. xvii., p. 412 (1876).

Blackish piceous, glabrous; wings hyaline; bases of antennal joints, eyes, ocelli, and five broad abdominal bands crystalline white; frons fulvous; antennæ 7-jointed, basal joint conical, the second to fourth obconical, fifth to seventh fusiform; the

terminal joint terminating in an acute point; head rounded, truncate in front and behind, with a central obtuse carina and an oblique stria behind each eye.

Length 3 millims.

(Coll. by Gulliver.)

One example.

ORTHOPTERA AND HEMIPTERA.

DESCRIPTION OF PLATE LIV.

Fig. 1.	<i>Phisis spinifera</i> , <i>Butl.</i>	-	Profile view enlarged.
" 1 ^a .	" " "	-	Upper surface of head and thoracic shield.
" 2.	<i>Nemobius luteolus</i> , <i>Butl.</i>	-	Upper surface enlarged.
" 2 ^a .	" " "	-	Head and thoracic shield in profile, greatly magnified.
" 3.	<i>Epachromia rodericensis</i> , <i>Butl.</i>	-	Upper surface enlarged.
" 3 ^a .	" " "	-	Head and thoracic shield in profile, greatly magnified.
" 4.	<i>Bacillus incommodus</i>	" -	Upper surface.
" 4 ^a .	" "	" -	Head in profile, greatly enlarged.
" 4 ^b .	" "	" -	Terminal segments of abdomen, ventral surface, enlarged.
" 4 ^c .	" "	" -	Terminal segments of abdomen, profile view.
" 5.	<i>Velia infernalis</i>	" -	Upper surface, greatly magnified.
" 6.	<i>Reduvius laniger</i>	" -	" "
" 6 ^a .	" "	" -	Profile of head, "
" 7.	<i>Aptinotherips fasciatus</i>	" -	Upper surface, "
" 8.	<i>Sigara felix</i> -	" -	" "
" 8 ^a .	" " -	" -	Front of head, "
" 9.	<i>Coccus ceratiformis</i> -	" -	Anterior portion of ventral surface.

